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**Draft Final Decision Document  
for Element One of  
the CERCLA Hazardous Wastes  
Interim Response Action  
at the Rocky Mountain Arsenal**

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Prepared for:

U.S. Army Program Manager  
for Rocky Mountain Arsenal

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## **SECTION 1**

### **INTRODUCTION**

This Decision Document outlines management alternatives and mechanisms to coordinate disposal options for hazardous wastes generated at the Rocky Mountain Arsenal (RMA) as a result of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) activities. This Decision Document, however, does not select a specific disposal decision for the waste generated and managed at RMA. Instead, six potential waste management alternatives have been identified for all the waste streams generated at RMA. Upon approval of this Decision Document, a subsequent Implementation Letter(s) will be submitted for each waste disposal action, selecting one (or more) of the approved disposal alternatives of this Decision Document.

Section 2 of this Decision Document provides a brief background on the CERCLA Liquid Wastes Interim Response Action (IRA) currently being conducted at RMA, including this expansion which consists of three additional elements. Section 3 identifies the objectives of Element One of this IRA expansion; Section 4 identifies potential alternatives that are applicable to the disposal of waste streams identified in Element One of this IRA expansion. A list of chronological events that provides historical background information is presented in Section 5 and the IRA process for Element One is identified in Section 6. A brief discussion of applicable or relevant and appropriate requirements (ARARs) is included in Section 7 and Section 8 discusses how Element One of this IRA is consistent with the Final Response Action.

## SECTION 2

### BACKGROUND

The "Pretreatment of CERCLA Liquid Wastes IRA" is being conducted as part of the IRA Process for RMA in accordance with the June 5, 1987, report to the court in United States versus Shell Oil Co., the proposed Modified Consent Decree dated June 7, 1988, and the Federal Facility Agreement dated February 17, 1989.

After the alternatives were reviewed according to the criteria listed in the above referenced documents, a new wastewater treatment system was chosen as the best solution for this IRA. Implementation of this IRA began in August 1991, and the new wastewater treatment system has been constructed. On January 14, 1992, RMA submitted a Technical Study to U.S. Environmental Protection Agency (EPA) Region VIII for an expansion of the CERCLA Liquid Wastes IRA. The Technical Study proposed to amend the "Pretreatment of CERCLA Liquid Wastes IRA of the Federal Facility Agreement to encompass a broader range of waste streams and waste management activities for both on-post and off-post operable units. The expansion has three elements:

- Element One - Management options for disposal and/or treatment of hazardous waste that has been or will be placed in storage areas at RMA, and which have not been addressed in another IRA. Waste streams include: RI/FS wastes; IRA wastes; miscellaneous waste from vehicle, grounds, and building maintenance; and items found on post each of which may contain hazardous waste properties.
- Element Two - Approval of management options relating to remediation of selected equipment and sites contaminated with polychlorinated biphenyl (PCB) wastes. These wastes primarily consist of contaminated equipment, soil, and building rubble.
- Element Three - Selection and approval of an on-site facility for managing solids that are bulk hazardous wastes.

This Decision Document addresses only Element One.

### SECTION 3

#### INTERIM RESPONSE ACTION OBJECTIVES

The overall objectives of IRAs are to select alternatives: that are protective of human health and the environment; that are cost effective; that are timely; that, to the maximum extent practicable, are consistent with and contribute to the effective performance of Final Response Actions; that to the maximum extent practicable, attain ARARs; and that are compatible to the maximum extent practicable with final remediation decisions in the Records of Decision (ROD).

The objective of Element One of this IRA expansion is to develop and implement management options for a mechanism to coordinate waste handling efforts prior to the disposal and/or treatment of investigation-derived wastes and activity-derived wastes that have been or will be placed into storage areas on RMA. The potentially hazardous waste streams addressed in this Decision Document are categorized below based on various CERCLA activities conducted on site:

- CERCLA Investigation-Derived Wastes
  - Soils
  - Liquid Wastes
  - Personal Protective Equipment (PPE)
  - Laboratory Wastes
  - Trash
  - Contaminated Debris
  - Miscellaneous Drummed Solids
- Utility System Wastes
- Sewage Treatment Plant Wastes
- Facility Maintenance Shop Wastes
- Motor Pool Wastes
- Laboratory Wastes
- Found On-Post Wastes
- Wastes Derived from IRA Activities

## **SECTION 4**

### **INTERIM RESPONSE ACTION ALTERNATIVES**

Potential alternatives have been identified for this IRA based upon the treatment and disposal options that are available for the various waste streams that were identified in Section 3. The potential alternatives for each waste stream are discussed below and summarized in Table 4-1. This discussion is abbreviated because these alternatives constitute routine management and disposal options common to widespread industry practices in compliance with the Resource Conservation and Recovery Act (RCRA).

#### **4.1 Long-Term Storage**

Most of the waste types identified in Section 3 are presently stored at RMA awaiting final disposal. Continued long-term, on-site storage is a management option for these and other hazardous wastes until a final treatment or disposal alternative is identified. These wastes must be stored in compliance with the substantive requirements of RCRA and other state and federal laws and regulations, and only additional more stringent state hazardous waste requirements.

#### **4.2 On-Site Treatment/Stabilization**

On-site treatment and on-site stabilization are alternatives for soils containing free liquids that may be generated at RM. This includes 1727 sump sludges, Sewage Treatment Plant sludges, and drummed soils from remedial investigation/feasibility study (RI/FS) activities. Depending upon the final disposition of the material, stabilization may be an appropriate on-site treatment technology.

#### **4.3 Off-Site Land Disposal (Subtitle C)**

CERCLA § 121(d)(3) requires that hazardous substances, pollutants, or contaminants transferred off site for treatment, storage, or disposal during a CERCLA response action be transferred to a facility operating in compliance with Sections 3004 and 3005 of RCRA and other applicable



**Table 4-1**  
**Potential Waste Management Alternatives**

Wastes	Options	Long-Term Storage until ROD Implemented	On-Site Treatment/ Stabilization	Off-Site Subtitle C Disposal	Off-Site Reclamation	Off-Site Fuels Blending	Off-Site Incineration
<b>CERCLA Inv. - Derived Waste</b>							
Soil		X	X	X			
Liquid Wastes		X	X (wet soils)	X			
PPE			X				
Laboratory Wastes		X		X			
Trash		X	X	X			
Contaminated Debris		X		X			
Misc. Drummed Solids		X		X			
<b>CERCLA Support Activities</b>							
Utility Systems e.g.,				X			
Paint				X			
Sewage Treatment Plant e.g.,			X	X			
Spent Carbon Filters			X	X			
Facility Maint. Shop e.g.,			X	X	X		
Floor Sweepings Paint Waste			X	X			
			X	X			
			X	X			

Table 4-1 (Continued)

Potential Waste Management Alternatives

Wastes	Options	Long-Term Storage until ROD Implemented	On-Site Treatment/ Stabilization	Off-Site Subtitle C Disposal	Off-Site Reclamation	Off-Site Fuels Blending	Off-Site Incineration
Motor Pool e.g.,	Waste Oil Antifreeze Batteries Sump Sludge			X  X X	X X X X	X X X X	
Laboratories e.g.,	Solvents Standards Sample Residuals	X X X X		X X X X	X X X X		X X X X
Found On-Post		X	X	X		X	
Wastes Derived from IRA Activities e.g.,	1727 Sump Sludges SPDA Wastes Groundwater Treatment System Wastes		X X X X	X X X X	X		

"Trash" is defined to be normally disposable used products generated during field activities and may include wastes associated with field activities as well as decontamination efforts, like visqueen, paper towels, wrappers, etc.

"Contaminated debris" is generated during field activities and includes large items that are not usually disposable but are broken or no longer serviceable, like abandoned well casings, PVC piping, cement, etc.

"Drummed solids" is defined to include contaminated metal and contaminated sorption material.

"Found on-post" are those waste materials that were not associated with any specific operation or clean-up activity at RMA but were "found" on-post and were labeled as such.

laws and regulations. The EPA has issued an off-site policy, OSWER Directive 9834.11, describing procedures that should be observed when a CERCLA response action involves off-site storage, treatment, or disposal of CERCLA waste. The purpose of this policy is to avoid having CERCLA wastes contribute to present or future environmental problems by directing these wastes to facilities that are environmentally sound.

The off-site disposal of soils, PPE, laboratory wastes, contaminated debris, miscellaneous solids, and found on-post wastes may occur by transferring the waste to a hazardous waste Subtitle C RCRA facility. The Implementation Letters for the waste management actions will determine where these wastes will be disposed.

#### **4.4 Off-Site Incineration**

The off-site incineration alternative must also meet the CERCLA off-site policy conditions identified in Section 4.3. The wastes from a few of the CERCLA support activities have off-site incineration identified as a management alternative. Depending upon the waste characterization, the appropriate incinerator will be regulated under Subtitle C hazardous waste criteria, or under Subtitle D solid waste criteria.

#### **4.5 Off-Site Reclamation**

Off-site reclamation is an alternative for certain wastes generated as a result of facility maintenance and those activities associated with the Motor Pool at RMA. Wastes from these areas could include spent batteries, solvents, and used oils that may be reclaimed off site. Since reclamation is an off-site alternative, the conditions of the CERCLA off-site policy must be adhered to.

#### **4.6 Off-Site Fuels Blending**

Fuels blending is an alternative for solvents and used oils generated at RMA. These wastes could be blended as fuels to be burned for energy recovery. This alternative is an additional

recycle/recovery alternative that would be conducted off site and would be consistent with the CERCLA off-site policy.

## SECTION 5

### CHRONOLOGY OF EVENTS

The significant events pertaining to Element One of the expanded CERCLA Liquid Wastes IRA are presented below.

<u>Date</u>	<u>Event</u>
Summer 1984	In support of activities conducted under RI and IRA programs at RMA, storage of wastes in warehouses began.
June 1987	State of Colorado, Shell Oil Company, EPA, and U.S. Army agreed that certain IRAs would be conducted.
February 1988	Proposed consent decree lodged in the case of United States versus Shell Oil Company with the U.S. District Court in Denver, Colorado. The consent decree specified 13 interim actions, including the CERCLA Liquid Wastes IRA, to facilitate remediation activities.
June 1988	Proposal modified Consent Decree.
February 1989	Federal Facilities Agreement (FFA) was developed to establish a procedure by which the organizations would cooperate in the assessment, selection, and implementation of Response Actions resulting from the release or threat of release of hazardous substances, pollutants or contaminants at or from the Arsenal. (Prior to the effective date of the FFA, participation by the Army, EPA, Department of the Interior, Agency for Toxic Substances and Disease Registry, and Shell in the RI/FS and IRAs were governed by the February 1988 and June 1988 proposed Consent Decrees.)
June 1989	Formal Waste Management Program for storing investigation-derived wastes began.
June 1990	Final IRA Decision Document for CERCLA Liquid Wastes IRA.
June 1991	Final IRA Implementation Document issued, construction began.

## SECTION 6

### IRA PROCESS

The process for Element One of this IRA is as follows:

1. Opportunities for public participation in the development and approval of Element One of this IRA expansion will be provided before issuance of the respective final Decision Document. There will be notice and opportunity for written comment on this draft Decision Document; however, a public meeting will not be scheduled. Opportunity for discussion at a public meeting will be provided if a public meeting has otherwise been scheduled during the appropriate time. After the close of the comment period for this draft final version, a final version will be prepared.
2. The draft final Decision Document will be subject to dispute resolution. At the close of the period for invoking dispute resolution, if dispute resolution is not invoked, or after the completion of dispute resolution, the Army shall issue a final Decision Document.
3. After the issuance of the final Decision Document, each specific proposal for disposing and/or treating hazardous waste items or waste, will be initiated with a letter Implementation Document to the organizations and the State. This letter will describe: the hazardous waste site or equipment involved; the origin and storage site of the waste; and the alternative from the final Decision Document that will be used (including the method and location of disposal and/or treatment and/or remediation). Any organization wishing to invoke dispute resolution regarding a letter Implementation Document must do so within 10 calendar days after receipt of the document.
4. As Lead Party for design and implementation of this IRA, the Army will prepare the letter Implementation Documents, as described above, and will be responsible for implementing the IRA in accordance with the IRA letter Implementation Documents.

## SECTION 7

### APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Activities conducted pursuant to this expansion of the CERCLA Liquid Wastes IRA may be governed by the following ARARs for the on-site storage and on-site treatment/stabilization alternatives identified in Section 4. Formal selection of these and other potential ARARs will be made in the letter Implementation Document for each specific waste stream disposal alternative.

Although some requirements do not fit neatly into these categories, in general there are three different types of ARARs:

- Chemical-specific
- Location-specific
- Activity-specific

These three different types of ARARs are discussed below for each of the three on-site alternatives identified in Section 4. For the off-site alternatives, RMA will ensure that all appropriate and applicable requirements of RCRA are adhered to, ensuring compliance with the CERCLA off-site policy. Specific requirements will include all generator notifications as specified in 40 CFR Part 262 and 268. In addition, the off-site shipments of any wastes will comply with the appropriate Department of Transportation regulations and the transporter regulations under 40 CFR Part 263 as appropriate.

#### 7.1 Chemical-Specific ARARs

Chemical-specific (or ambient) requirements set health- or risk-based numerical values or ranges in various environmental media for specific hazardous substances, pollutants, or contaminants. Such ARARs establish either protective clean-up levels for the chemicals of concern in the designated media, or indicate an appropriate discharge limit for particular chemicals of concern. Only a limited number of chemical-specific requirements have been promulgated.

Contaminants identified at RMA that are of concern or interest include inorganic chemicals, volatile and semivolatile organic chemicals, and pesticides. These RMA contaminants of concern are identified in Table 7-1.

#### **7.1.1 On-Site Storage Alternative**

The objective of the alternative would be to continue storing certain investigation-derived wastes on site until an appropriate treatment or disposal alternative has been identified, or until the final remedy of the site is selected. This alternative does not involve clean-up levels. In addition, this alternative does not address discharge limits; therefore, there are no pertinent ambient or chemical-specific ARARs for this alternative.

#### **7.1.2 On-Site Treatment/Stabilization Alternative**

The objective of this alternative would be treatment or stabilization of wastes for eventual disposal either on or off site. This treatment alternative would not include clean-up levels. This treatment alternative may include removing free liquids from containerized wastes and/or adding material to stabilize the waste. Liquids removed from the containerized wastes would be discharged to RMA's CERCLA wastewater treatment system. The CERCLA wastewater treatment system is an IRA and has chemical-specific ARARs identified for the effluent in the Final Decision Document (June 1990) (Appendix I). The chemical-specific ARARs identified for this wastewater system IRA will not be repeated in this document; therefore, there are no pertinent ambient or chemical-specific ARARs.

#### **7.2 Location-Specific ARARs**

Location-specific ARARs are restrictions placed on the concentration of hazardous substances or on the conduct of activities solely because they occur in special locations. These ARARs may restrict or preclude certain remedial actions or they may apply only to certain portions of a site.



TABLE 7-1

## RMA Contaminants of Concern

<u>ABBREVIATION</u>	<u>ANALYTE</u>
111 TCA	1,1,1-Trichloroethane
112 TCA	1,1,2-Trichloroethane
11 DCE	1,1-Dichloroethene
11 DCA	1,1 Dichloroethane
12 DCE	1,2-Dichloroethene
12 DCLE	1,2-Dichloroethane
ALDRIN	Aldrin
AS	Arsenic
ATZ	Atrazine
BCHPD	Bicyclo (2,2,1) Hepta-2, 5-Diene
BTZ	Benzothiazole
C6H6	Benzene
CCL4	Carbon Tetrachloride
CD	Cadmium
CH2CL2	Methylene Chloride
CHCL3	Chloroform
CL6CP	Hexachlorocyclopentadiene (HCCPD)
CLC6H5	Chlorobenzene
CLDAN	Chlordane
CPMS	p-Chlorophenylmethyl Sulfide
CPMSO	p-Chlorophenylmethyl Sulfoxide
CPMSO2	p-Chlorophenylmethyl Sulfone
CR	Chromium
Cu	Copper
DBCP	Dibromochloropropane
DCPD	Dicyclopentadiene
DIMP	Di-isopropylmethylphosphonate
DITH	Dithiane
DLDRN	Dieldrin
DMDS	Dimethyldisulfide
DMMP	Dimethyl Methylphosphonate
ENDRIN	Endrin
ETC6H5	Ethylbenzene
FLA	Fluoroacetic Acid
HG	Mercury
IMP	Isopsopyl Methyl Phosphate
IMPA	Isopropyl Methyl Phosphoric Acid
ISODR	Isodrin
LSO	Lewisite Oxide

**Table 7-1 (Continued)**

**RMA Contaminants of Concern**

<b><u>ABBREVIATION</u></b>	<b><u>ANALYTE</u></b>
MTH	Malathion
	Methylene Chloride
MEC6H5	Toluene
MIBK	Methyl Isobutyl Ketone
NNDM	N-Nitrosodimethylamine
OXAT	1,4-Oxathiane
PB	Lead
PPDDE	1,1-Dichloro-2,2-bis (Para-chlorophenyl) ethylene
PPDDT	2,2-Bis (Para-chlorophenyl) -1,1,1-Trichloroethane
PRTN	Parathion
SA	Sarin
SM	Sulfur Mustard
SUPONA	Supona
TCLEA	1,1,2,2-Tetrachloroethane
TCLEE	Tetrachloroethylene
TDGCL	Thiodiglycol
TRCLE	Trichloroethylene
V	Vapona
XYLEN	Xylenes
ZN	Zinc

Paragraph 44.2 of the Federal Facilities Agreement (FFA) provides that:

Wildlife habitat(s) shall be preserved and managed as necessary to protect endangered species of wildlife to the extent required by the Endangered Species Act (16 U.S.C. § 1531 et seq.), migratory birds to the extent required by the Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.), and bald eagles to the extent required by the Bald Eagle Protection Act (16 U.S.C. § 688 et seq.).

While these provisions of the FFA are not ARARs, the statutes cited therein are ARARs, applicable to all the on-site alternatives discussed in this section, and will be complied with for each alternative. The impact of these requirements on each of these alternatives is dependent upon where these alternatives would be located at RMA. Coordination for any of these alternatives would be maintained with the U.S. Fish and Wildlife Service to ensure that no such adverse impact would arise from implementation of these alternatives.

The Clean Water Act regulations identified in 40 CFR Part 230 for Section 404(b)(1) guidelines for specification of disposal sites for dredged or fill material were reviewed and determined not to be applicable to any of the three alternatives since the discharge of dredged or fill material into waters of the United States is not expected or contemplated. Since these regulations only address the disposal of such materials into the waters of the United States, which is not contemplated, they are not considered to be relevant and appropriate to apply to these alternatives.

The regulations identified in 33 CFR Parts 320-330 regarding navigation and navigable waters for Corps of Engineers, Department of the Army, were reviewed and determined to be neither applicable or relevant and appropriate for the alternatives. This determination is based on information that these alternatives do not involve any of the activities, nor are they similar to the activities, that are intended to be controlled by these regulations as defined in 33 CFR § 320.1(b).

The regulations for units managing hazardous wastes in 40 CFR §§ 264.18(a) and (c) were reviewed and determined to be neither applicable or relevant and appropriate. These regulations identify location standards that prohibit wastes to be managed within 200 feet of a fault that has

had displacement in Holocene time or within salt dome formations, salt bed formations, and underground mines and caves. These conditions do not exist at RMA and are therefore not considered an ARAR for the alternatives.

Location standards identified in 40 CFR § 264.18(b) require facilities located in a 100-year floodplain to be designed, constructed, operated, and maintained to prevent washout by a 100-year flood. These regulations were reviewed and determined to be applicable and relevant and appropriate for the on-site alternatives. Dependent upon where these alternatives would be located, the Army will ensure compliance with the requirements.

The provisions of 40 CFR § 6.302 (a) and (b) regarding construction that would have an adverse impact on wetlands or be within a floodplain are considered appropriate and relevant and appropriate for these alternatives. The Army will ensure that the location of these alternatives would cause no adverse input on wetlands. Coordination would be maintained with the U.S. Fish and Wildlife Service to ensure that any such adverse impacts are avoided or mitigated.

All the location-specific criteria discussed above address all of the potential on-site alternatives.

### **7.3 Activity-Specific ARARs**

Performance, design, or other action-specific requirements set controls or restrictions on activities related to the management of hazardous substances, pollutants, or contaminants. These action-specific requirements may specify particular performance levels, actions, or technologies as well as specific levels (or a methodology for setting specific levels) for discharged or residual chemicals.

#### **7.3.1 On-Site Storage Alternative**

The requirements under the Clean Air Act, the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Colorado's Air Pollution Control Commission Regulations, and Colorado Ambient Air Quality Standards have been reviewed and determined to be neither applicable or

relevant and appropriate for this alternative. RMA currently has storage units available for use under this alternative and no new units are expected to be constructed. Therefore, this alternative would not result in the release of any contaminant that could adversely impact ambient air quality.

Subtitle C of RCRA outlines storage requirements for hazardous wastes managed in containers in 40 CFR § 264 Subpart I. For material determined to be hazardous waste, substantive RCRA provisions are applicable to their management. In general, the substantive provisions for container management include: container condition, compatibility of the wastes to be stored, management of the containers, inspection protocol, and containment criteria.

In addition to the storage requirements of Subtitle C, the RCRA regulations also establish LDRs in 40 CFR Part 268 for all hazardous wastes. If it is determined that a waste stream included in this element subject to LDR is present, the Army will act in a manner consistent with EPA guidelines (OSWER Directives 9347.3-01 through 9347.3-07) then in effect for the management of such wastes in the context of CERCLA clean-up actions. Existing LDR regulations identified in 40 CFR § 268.50 state that restricted hazardous wastes may not be stored at a site unless the storage is solely for the purpose of accumulating sufficient quantities of the waste to facilitate proper disposal treatment or recovery. Generally, storing RCRA hazardous wastes and IDW until a final disposal option is selected in a ROD is allowable storage in accordance with the CERCLA guidance (OSWER Directive 9345.3-02FS) to ensure compliance with the RCRA LDRs.

### **7.3.2 On-Site Treatment/Stabilization Alternative**

The Superfund Amendments and Reauthorization Act of 1986 (SARA) § 121 establishes a preference for remedial action involving treatment that permanently and significantly reduces the volume, toxicity or mobility of hazardous substances, pollutants, and contaminants at the site. RCRA requirements may be applicable or relevant and appropriate to this on-site treatment alternative depending on whether the waste materials to be treated are hazardous wastes and the requirements for treatment apply. RCRA defines treatment as:

Any method, technique, or process, including neutralization, designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste nonhazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume. (40 CFR § 260.10)

The RCRA actions that may be applicable or relevant and appropriate are identified in Table 7-2. Requirements under the Safe Drinking Water Act and the Clean Water Act were determined not to be ARARs since this alternative will not provide drinking water, and does not address a public water system (the ARARs for the CERCLA Wastewater Treatment System are in Appendix I).

Air emissions regulations were reviewed and determined not to be applicable or relevant and appropriate to this alternative since there are no national or state ambient air quality regulations that would address treatment of wastes in containers. The NESHAP were reviewed and determined not to be applicable or relevant and appropriate since they were developed for manufacturing processes, which is significantly dissimilar to this alternative.

Table 7-2

## Potential Action-Specific ARARs for the On-Site Treatment/Stabilization Alternative

Action	Requirements	Prerequisite for Applicability	Citation																
Treatment (in a unit)	Design and operating standards for unit in which hazardous waste is treated. (See citations at right for design and operating requirements for specific unit.)	Treatment of hazardous waste in a unit.	40 CFR 264.170-264.178 (containers) 40 CFR 264.190-264.197 (tanks)																
Placement of Liquid Waste in Landfill	<u>Liquids in Landfills Prohibition.</u> Containers holding free liquids may not be placed in a landfill unless the liquid is mixed with an absorbent or solidified.		40 CFR 264.314																
Treatment (when Waste will be Land Disposed)	Treatment of waste subject to ban on land disposal must attain levels achievable by best demonstrated available treatment technologies (BDAT) for each hazardous constituent in each listed waste, if residual is to be land disposed. If residual is to be further treated, initial treatment and any subsequent treatment that produces residual to be treated need not be BDAT, if it does not exceed value in CCWE (Constituent Concentration in Waste Extract) Table for each applicable water. (See 51 <u>FR</u> 40642, November 6, 1986.)	<p>Disposal of contaminated soil and debris resulting from CERCLA is <u>not</u> subject to land disposal prohibitions and/or treatment standards for solvents, dioxins, or California list wastes until November 8, 1990 (and for certain first third wastes until August 8, 1990).</p> <p>All wastes listed as hazardous in 40 CFR Part 261 as of November 8, 1984, restrictions promulgated for land disposal and/or treatment standard determination as follows:</p> <table><tr><td>Solvents and dioxins</td><td>Nov. 8, 1986</td></tr><tr><td>California list wastes</td><td>July 8, 1987</td></tr><tr><td>One-third of all ranked and hazardous wastes</td><td>Aug. 8, 1988</td></tr><tr><td>Underground injection of solvents and dioxins and California list wastes</td><td>Aug. 8, 1988</td></tr><tr><td>CERCLA response action and RCRA corrective action soil and debris</td><td>Nov. 8, 1988</td></tr><tr><td>Two-thirds of all ranked and listed hazardous wastes</td><td>July 8, 1989</td></tr><tr><td>All remaining ranked and listed hazardous wastes identified by characteristic under RCRA Section 3001</td><td>May 8, 1990</td></tr><tr><td>Any hazardous waste listed or identified under RCRA Section 3001 after Nov. 8 1984</td><td>Within 6 mos. of the date of identification or listing.</td></tr></table>	Solvents and dioxins	Nov. 8, 1986	California list wastes	July 8, 1987	One-third of all ranked and hazardous wastes	Aug. 8, 1988	Underground injection of solvents and dioxins and California list wastes	Aug. 8, 1988	CERCLA response action and RCRA corrective action soil and debris	Nov. 8, 1988	Two-thirds of all ranked and listed hazardous wastes	July 8, 1989	All remaining ranked and listed hazardous wastes identified by characteristic under RCRA Section 3001	May 8, 1990	Any hazardous waste listed or identified under RCRA Section 3001 after Nov. 8 1984	Within 6 mos. of the date of identification or listing.	40 CFR 268.10 40 CFR 268.11 40 CFR 268.12 40 CFR 268.41 40 CFR 268 (Subpart D)  51 <u>FR</u> 40641 52 <u>FR</u> 25760
Solvents and dioxins	Nov. 8, 1986																		
California list wastes	July 8, 1987																		
One-third of all ranked and hazardous wastes	Aug. 8, 1988																		
Underground injection of solvents and dioxins and California list wastes	Aug. 8, 1988																		
CERCLA response action and RCRA corrective action soil and debris	Nov. 8, 1988																		
Two-thirds of all ranked and listed hazardous wastes	July 8, 1989																		
All remaining ranked and listed hazardous wastes identified by characteristic under RCRA Section 3001	May 8, 1990																		
Any hazardous waste listed or identified under RCRA Section 3001 after Nov. 8 1984	Within 6 mos. of the date of identification or listing.																		

## SECTION 8

### CONSISTENCY WITH THE FINAL RESPONSE ACTION

This Draft Final Decision Document outlines management alternatives, as well as mechanisms, to coordinate disposal options for hazardous wastes generated at RMA as a result of CERCLA activities. Although the Final Response Actions have not been selected at this time, this IRA was developed to be consistent with and contribute to a final response action's efficient performance throughout the remainder of the remedial action process at RMA.



**SECTION 9**  
**RESPONSE TO COMMENTS FROM DRAFT DOCUMENT**  
**ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT**

Organization	Comments	Response or Possible Resolution
U.S. EPA Region VIII	<u>General Comments</u>  Understandably, detail is lacking regarding the specifics of the "alternatives" which must be provided in the Implementation Documents.	Detailed information regarding each alternative will be included in the appropriate Implementation Letter.
	The document generalizes in the text as to ARARs that might be pertinent if a certain alternative is chosen. EPA understands that the specific ARARs will be explained in detail when the preferred alternative is described in the Implementation Documents and that Dispute Resolution may be invoked. However, the Decision Document does do a good job in covering the ARARs that may be pertinent.	Detailed information regarding ARARs for each alternative will be included in the appropriate Implementation Letter.
	EPA is treating this document as a draft decision document and not as a draft final decision document.	Concur. This document is a draft decision document.
	<u>Specific Comments</u>  Page 4-5, Section 4.6: For the fuel blending alternative, RMA would need to comply with 40 CFR 266.42 standards applicable to generators of used oil burned for energy recovery. The receiving fuel blending facility must comply with 40 CFR 266.43 standards applicable to marketers of used oil burned for energy recovery.	Implementation Letters for this alternative will include 40 CFR Part 266, Subpart E - Used Oil Burned for Energy Recovery, as an ARAR if the wastes and the technology meet the applicability section of 40 CFR 266.40. However, since the Army will not blend fuel, 40 CFR 266.43 is not an ARAR.
	Page 6-1, Section 6, First Bullet: The document states that a public meeting will not be scheduled. It was EPA's understanding that a specific meeting would not be scheduled for public comment, but that the document would be discussed at another public meeting with other topics in that same time frame. Please clarify.	No meetings will be scheduled for Element One. The document will be discussed at a public meeting, if one is scheduled in the appropriate time frame.
	Page 7-14, Table 7-3: The citation listed under the column Treatment (in a unit) should be expanded to include 40 CFR 264.190 - 264.197, instead of 40 CFR 264.190 - 264.192.	The table will be changed to reflect 40 CFR 264.190 - 264.197.

# ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT (Continued)

Organization	Comments	Response or Possible Resolution
General Comment	Section 4.4 of the Element One Decision Document states that "All of the CERCLA IDW... have off-site incineration identified as a management alternative." Yet Table 4-1 shows that <u>only</u> waste solvents from the laboratory has off-site incineration identified as one of several potential alternatives. Re-write paragraph 4.4 to more accurately reflect what we mean.	Section 4.4 will be re-written to omit "All of the CERCLA investigation-derived wastes and"
Shell Oil Company	<p><u>Letter</u></p> <p>It is our understanding that this IRA does not require adoption of specific waste management practices and that the organizations can continue practices that comply with applicable law, without regard to whether they have been approved under the IRA. This is of particular concern to the extent that the IRA appears to, but should not, cover ordinary, non-hazardous solid waste.</p>	Concur. This document constitutes coordination of the listed management alternatives, but it does not require their adoption for any specific waste stream or waste shipment. Element One of this IRA addresses only the management of hazardous waste.
	<p><u>General Comments</u></p> <p>1. The decision document should refer to or be consistent with EPA guidance on Investigation-Derived Wastes (IDW). Consistent with this guidance, it should be noted that IDW generated in the future can be returned to the source area immediately after generation if this is deemed protective of human health and the environment. Returning IDW to the source area will be protective of human health and the environment in the overwhelming majority of instances at RMA because of the secure nature of the site and the relatively low levels of contaminants generally found in the IDW. This practice will avoid the generation of large quantities of IDW in the future.</p>	<p>Concur in the observation, but do not concur in the suggested revision. RMA manages IDW in accordance with RMA's letter of November 19, 1990 to EPA. The letter provided that: (1) in areas of known combined surface and subsurface contamination, soils that are excavated are left on site; (2) in areas of no contamination, soils are left on-site; and (3) where the subsurface is contaminated and the surface is uncontaminated, the soils will be drummed, removed, or otherwise managed.</p> <p>Only this third situation will generate a waste stream that requires management under Element One.</p>

# ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT (Continued)

Organization	Comments	Response or Possible Resolution
Shell Oil Company (continued)	2. Table 7-2 could mislead the casual reader, who might assume that a substantial number of the listed waste codes might exist at RMA. Even though a footnote at the end of the table indicates that these waste codes do not necessarily exist at RMA, it is unnecessary to identify Land Disposal Restrictions (LDRs) for any waste codes unless it actually exists at RMA. In reality, only a small fraction of these wastes codes may exist at RMA. Furthermore, LDRs may or may not be ARARs for waste codes which may exist at the site. Shell believes that this table has little value at this stage of the IRA and should be deleted from the text.	RMA concurs that this comment accurately reflects the statement of law; however, we believe that inclusions of the table aids in clarifying RMA's compliance strategy. RMA also believes that the footnote provides adequate notification to those who may misinterpret the significance of the table.
	<u>Specific Comments</u>  1. Page 1-1, Second Paragraph: It would be helpful to readers of this section to specify that the IRA being expanded is the CERCLA liquid waste IRA.	The Second Paragraph, first sentence, will be modified to read: "Section 2 of this Decision Document provides a brief background on the CERCLA Liquid Wastes Interim Response Action (IRA) currently being conducted at RMA, including this expansion which consists of the three additional elements to the original IRA."
	2. Page 2-1, First Paragraph: The reason for referring to the proposed Modified Consent Decree dated June 7, 1988 in this paragraph is unclear.	This paragraph references all agreements which address the manner in which IRAs at RMA are to be conducted. Section IX of the proposed Modified Consent Decree outlines the implementation process for IRAs. Although the consent decrees were never adopted or accepted by the courts, the implementation process is still used.
	3. Page 2-1, Second Paragraph, First Bullet: The waste streams listed as being covered by this element of the IRA should only be covered if they are hazardous wastes.	Each waste stream identified in this Decision Document potentially is hazardous waste. If, upon analysis, any specific waste is determined to not be a hazardous waste, then this element of the IRA will not apply to its management and disposal.

# ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT

(Continued)

Organization	Comments	Response or Possible Resolution
Shell Oil Company (continued)	4. Page 3-1, First Paragraph: Shell recommends deleting this paragraph. It if is to be retained, it should be made consistent with Section XXII of the FFA. That is, add "that are timely; that, to the maximum extent practicable, are consistent with and contribute to the effective performance of Final Response Actions; that to the maximum extent practicable, attain ARARs..." and delete "that utilize permanent solutions and alternative treatment technologies a resource recovery technologies to the maximum extent practicable as stated in CERCLA 121 clean-up standards."	Page 3-1, First Paragraph will be modified as requested.
	5. Page 4-1, Second Paragraph: Many of the wastes mentioned in Section 3 are not hazardous wastes. For example, the overwhelming majority of IDW currently stored at RMA are not hazardous wastes and need not be stored in substantive compliance with the requirements of Subtitle C of RCRA or more stringent state requirements.	The applicability of RCRA requirements including a hazardous waste determination are yet to be determined for each waste stream, including investigation-derived wastes. Once this determination is made, only those wastes determined to be hazardous wastes will be included in Implementation Letters.
	6. Table 4-1: As stated previously in our comments, many of the wastes referred to in the text and listed in this table are not hazardous wastes. In addition, many of the materials that may be hazardous and are to be recycled (such as used batteries and used oil recycled in a manner other than for energy recovery) are not subject to the management and permit requirements under RCRA for hazardous waste (see 40 CFR 261.6). Hence, it is unclear why many of these materials are covered in an IRA which was intended to be specific to hazardous wastes.	Hazardous wastes that are recyclable are subject to the requirements for generators, transporters, and storage facilities as required under 40 CFR 261.6 except for certain materials like some used oil and spent lead-acid batteries that are destined for reclamation. These materials are regulated under Subparts C through H of Part 266. The fact that these waste streams are addressed in this Decision Document does not mean that every disposal of used oil or spent batteries will have to be addressed in Implementation Letters.
	7. Page 4-4, First Paragraph: The document setting forth EPA's "off-site policy" should be specifically cited.	After "off-site policy", "OSWER Directive 9834.11" will be added.
	8. Page 4-4, Second and Third Paragraphs: Shell's understanding in approving expansion of this IRA was that it will apply only to hazardous wastes. References to transferring wastes under the IRA to a Subtitle D facility should therefore be deleted. Conforming corrections will be required in Table 4-1.	This element of the IRA will only address hazardous wastes.
	9. Page 5-2: Paragraph 22.16 of the FFA requires submission of the technical study to the RMA Committee, not just EPA.	This section will be revised to reflect that the FFA requirement of paragraph 22.16 were followed in the modification of the CERCLA IRA.
Shell Oil Company (continued)		

# ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT (Continued)

Organization	Comments	Response or Possible Resolution
	<p>10. Page 7-2, Second Paragraph: It is unclear why LDRs are identified as potential ARARs, since according to page 7-1, the ARAR discussion is limited to "the three on-site alternatives identified in Section 4," which do not apparently include on-site disposal. Although the discussion of on-site treatment/stabilization on Page 7-2 refers to "eventual disposal on or off-site," we assume that such disposal would be under a subsequent phase of this IRA (or perhaps under the ROD). If immediate on-site disposal is contemplated, provision for a suitable facility must be made. If such disposal is not contemplated, treating to BDAT may not, in fact, be required if the wastes were not RCRA hazardous wastes or, even if they were, if they were consolidated within the same Area of Contamination (AOC).</p>	<p>Concur. On-site disposal is not an alternative under Element One of this IRA. The discussions of LDR's will be deleted.</p>
	<p>11. Pages 7-3 and 7-4, Table 7-1: The subject table lists the following compound which are not contaminants of concern: Chloride, Cyanide, Dimethyl Hydrazine, Fluoride, Selenium, Sulfate, and Trimethyl Phosphite. Also, the following compounds are absent from the list: Fluoroacetic Acid, Isopropyl Methyl Phosphorate, Isopropyl Methyl Phosphoric Acid, Lewisite, Lewisite Oxide, Malathion, Methylene Chloride, N-Nitrosodimethylamine, Sarin, Sulfur Mustard, and Vapona. Also the abbreviation for Copper should be Cu not Co.</p>	<p>Table 7-1 will be modified to reflect these changes.</p>
	<p>12. Page 7-12, Third Paragraph: Because of the reduced amount of IDW expected to be generated between now and issuance of the ROD, the last sentence should not be limited to IDW but be expanded to refer to RCRA hazardous wastes generally.</p>	<p>Concur. The paragraph will be modified accordingly.</p>
	<p>13. Page 7-13, First Paragraph: Although the first sentence may be relevant to selection of an alternative, it is not itself an ARAR.</p>	<p>The first sentence is not saying that SARA Section 121 preference for treatment is an ARAR. If treatment is selected as a remedial action, the statutes' preference is to permanently and significantly reduce the volume, toxicity, or mobility of hazardous substances, pollutants, and contaminants at the site.</p>

# ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT (Continued)

Organization	Comments	Response or Possible Resolution
Shell Oil Company (continued)	<p>14. Page 7-14, Table 7-13: The logic behind selection of particular sections from RCRA regulations is unclear. For example, requirements for closure of containers (CFR 264.178) are listed but not for closure tanks (CFR 264.197). Also, since on-site disposal is not an alternative explicitly considered, the relevance of the prohibition against placing liquids in landfills is not clear. Finally, since the deadlines in CFR 268.10 - 268.12 have already passed, there appears to be no reason to include them in a listing of action-specific ARARs.</p>	<p>Tank closure criteria will be added to this table. 40 CFR 264-190 - 264.192 will be changed to 40 CFR 264.190 - 264.197.</p> <p>Treatment has occurred on-site for elimination of free liquids for off-site disposal. Whether disposal occurs on-site or off-site, free liquids must still be eliminated and is the reason for inclusion in this table.</p> <p>The reason for adding these deadlines identified in 40 CFR 268.10-268.12 is to recognize that all RCRA hazardous wastes are now restricted from land disposal with the exception of newly identified or listed wastes such as FO39 or new wastes identified under TCLP.</p>
Colorado Department of Health (CDH)	<p><u>General Comment</u></p> <p>1. 6 CCR 1007-3, Section 262.11 requires that a person who generates a solid waste must determine if that waste is a hazardous waste. The document should specify how such a determination will be made for each waste stream.</p>	<p>Nonconcur. The scope of this element of the IRA includes management of wastes that are determined to be hazardous wastes. The generator is responsible for making this determination.</p>
	<p><u>Specific Comments</u></p> <p>1. Page 2-1, First Bullet: The text should be changed to read: "Management of options for disposal and/or treatment of potentially hazardous waste..." since some of these waste streams may be determined to be non-hazardous as per the methods described in 6 CCR 1007-3, Section 262.11. Conversely, if we know that all the wastes will be hazardous, the Subtitle D landfill alternative should be deleted from consideration.</p> <p>2. Page 4-1, Section 4.1: Please add the following underlined words to the text. "These wastes must be stored in compliance with the substantive requirements of RCRA and other state and federal laws and regulations, and only additional more stringent state hazardous waste requirements."</p>	<p>Hazardous waste determinations will be made for each waste stream. The Subtitle D landfill alternative will be omitted since this element of the IRA addresses only hazardous wastes.</p> <p>This language will be modified to reflect the fact that other laws may apply.</p>

# ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT

(Continued)

Organization	Comments	Response or Possible Resolution
Colorado Department of Health (continued)	3. Page 4-1, Section 4.2: Please provide more detail concerning the on-site treatment/stabilization alternatives. What types of treatment and stabilization are envisioned? What type of final disposition may occur; will the treated/stabilized material be stored on-site or shipped off?	Detail regarding the specifics of the alternatives, including treatment/stabilization, will be included in the Implementation Letters. However, we do contemplate potential treatment in the form of removing free liquids prior to land disposal. Treated waste may be stored, or it may be disposed of off-site under this part of the IRA.
	4. Table 4-1: Please clarify the category "trash." How does this differ from "contaminated debris" "drummed solids", and "found on post?" Under what circumstances would "trash" be considered contaminated material suitable for off-site Subtitle C disposal?	<p>"Trash" is defined to be normally disposable used products generated during field activities and may include wastes associated with field activities as well as decontamination efforts, like visqueen, paper towels, wrappers, etc.</p> <p>"Contaminated debris" is generated during field activities and includes large items that are not usually disposable but are broken or no longer serviceable, like abandoned well casings, PVC piping, cement, etc.</p> <p>"Drummed solids" is defined to include contaminated metal and contaminated sorption material.</p> <p>"Found on-post" are those waste materials that were not associated with any specific operation or clean-up activity at RMA but were "found" on-post and were labeled as such.</p> <p>These definitions will be added to the text.</p>
	5. Table 4-1, Page 4-1: The on-site treatment/stabilization alternatives include drummed soils from RI/FS activities. However, on Table 4-1, that alternative is not selected for soil. Please explain this discrepancy.	Page 4-1 will be changed to reflect "wet soils" as opposed to just "soils." In the past, soils generated from RI/FS activities may have also included water and, therefore, have to be stabilized to eliminate free liquids. Soils are no longer accepted in this manner and are therefore not identified in Table 4-1.
	6. Table 4-1: Please explain why off-site reclamation is not included as an alternative for spent carbon filters from the sewage treatment plant.	Off-site reclamation will be identified in Table 4-1 for spent carbon filters from the sewage treatment plant.

# ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT

(Continued)

Organization	Comments	Response or Possible Resolution
Colorado Department of Health (continued)	7. Table 4-1: Would off-site reclamation be an available alternative for "found on post" items with some salvage value?	"Found on post" items consist of a wide variety of small containers of such items as unused paint or other chemicals that were used or unused. These containers are placed into lab packs. Other "found on post" items consist of a mixture of unknown wastes that are chemically characterized. Most materials, because of their unknown origin or wide variety of mixtures or small quantities, could not be reclaimed or recycled.
	<u>ARARs Comments</u>	
	1. Page 7-1, Section 7: According to CERCLA Section 121, <u>on-site</u> alternatives are subject only to ARARs; therefore, off-site alternatives must comply with <u>all</u> requirements of <u>all</u> applicable statutes.	Section 7, Page 7-1, third paragraph references that "For the off-site alternatives, RMA will ensure... compliance with the CERCLA off-site policy." The off-site policy does require compliance with all applicable statutes and regulations. Therefore, no further clarification is needed.
	2. Page 7-10, Section 7.2: The document identifies the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald Eagle Protection Act as location-specific ARARs. The actual extent to which these statutes apply at the Arsenal is currently the subject of much debate, particularly on the center of the Off-post EA/FS and proposed legislation concerning the designation of RMA as a wildlife refuge. Regardless of the semantics concerning the application of these statutes to the Arsenal, the State believes that the statutes' respective requirements should not be used to limit clean-up of the site. Rather, they require the Army to achieve a clean-up which is adequate for the long term, healthy existence of the protected species.	RMA notes the state's comment.
	3. The location-specific standards identified in 40 CFR Section 264.18(b) and 40 CFR Section 6.302(a) and (b) are "applicable" requirements.	Concur. These citations will be added to the text.
	4. The following action-specific ARARs should be included for the on-site storage and the on-site treatment/sterilization alternatives: 40 CFR Subpart B - General Facility Standards, 40 CFR Subpart C - Preparedness and Precaution, 40 CFR Subpart D - Category Plan, and 40 CFR Subpart G - Closure and Post-Closure Care.	Detail regarding the specifics of ARARs for each alternative will be identified in each Implementation Letter. In addition, RMA is currently adhering to the substantive requirements of these Subparts identified in 40 CFR.



# ELEMENT ONE OF CERCLA LIQUID WASTE DECISION DOCUMENT

(Continued)

Organization	Comments	Response or Possible Resolution
Colorado Department of Health (continued)	5. Depending upon the circumstances, certain air emission regulations could be ARARs for the on-site treatment/ stabilization alternative.	As previously stated, detailed specifics of ARARs will be identified in the Implementation Letters.
	6. Please explain why landfills and LDRs are mentioned as ARARs in Table 7-3. If land disposal is an option, respective ARARs must be identified.	Liquids in landfills are mentioned as well as LDRs, because of the treatment/stabilization of the wastes that has to occur prior to off-site disposal. The treatment/stabilization of these wastes may occur on-site and although the disposal may not occur on-site, the criteria associated with disposal must be considered.
City of Commerce City	The City of Commerce City has been, and continues to be, in opposition to storage of any waste and/or contaminated material on the Rocky Mountain Arsenal. Although we can appreciate the rationale for venting store said material in an enclosed building, the City's position is that the Arsenal should be cleaned up to a residential standard and waste from said cleanup operations removed promptly.	RMA notes the City of Commerce comments. We would point out that this is an interim response action. Final decisions on waste storage or disposal will be addressed in the ROD.
U.S. Fish and Wildlife Service	We do not have any comments at this time.	No response required.

**APPENDIX I**

**Chemical-Specific ARARs**  
**for the**  
**CERCLA Wastewater Treatment System**  
**Interim Response**

## **8.0 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS FOR THE CERCLA WASTEWATER TREATMENT SYSTEM INTERIM RESPONSE ACTION**

### **8.1. AMBIENT OR CHEMICAL-SPECIFIC ARARS**

Ambient or chemical-specific requirements set concentration limits or ranges in various environmental media for specific hazardous substances, pollutants, or contaminants. Such ARARs either set protective clean-up levels for the chemicals of concern in the designated media or indicate an appropriate level of discharge.

The objectives of this IRA are discussed in the Assessment Document. This IRA will be implemented prior to the final remediation to be undertaken in the context of the Onpost Operable Unit ROD. The list of specific contaminants has been compiled based upon treatability test data and represents those contaminants likely to be contained in the system influent. The media of concern here is the wastewater treated by the proposed IRA system. This proposed IRA treatment system will discharge treated effluent to the sanitary sewer for eventual release after further treatment within the RMA sewage treatment plant (STP). Discharges from the STP are strictly regulated by the RMA NPDES Permit (currently under revision) and must attain the specific limitations contained in that permit prior to release from RMA. The ARARs listed below will apply at the point of release from the CERCLA Wastewater Treatment System (CWTs) IRA.

The current South Plants Wastewater Treatment Facility (SPWTF) will continue to be operated prior to the implementation of the new system pursuant to this IRA. The SPWTF will be subject to and comply with the chemical-specific ARARs identified below and will attain these limitations to the maximum extent practicable. The Army has been conducting continuous sampling and analyses of this system and it has been performing well. Due to recently promulgated standards being slightly lower than detection limits of the RMA laboratory, the Army will arrange, as soon as practicable, for confirmatory analyses to be done on future SPWTF effluent by contract laboratories which are certified at lower detection limits so that attainment of these ARARs can be verified.

Because this treatment system will not provide drinking water and is not a public water system, the standards established under the Safe Drinking Water Act (SDWA) and the Clean Water Act (CWA) for drinking water are not applicable to this IRA.

The standards contained in 40 CFR Section 264.94 were not considered applicable to this treatment system because the constituents in the influent are not from regulated units. Since

the standards promulgated pursuant to this regulation are identical to those promulgated under the National Primary Drinking Water Regulations (NPDW) pursuant to the SDWA, further discussed below, for the same 14 compounds these standards are not considered further.

Consistent with the most recent EPA guidance, the National Contingency Plan (NCP), 55 Fed. Reg. 8666, Maximum Contaminant Level Goals contained in the NPDW are not considered either applicable or relevant and appropriate to apply in the context of this treatment system. EPA's Tolerances for Pesticide Chemicals on or in Raw Agricultural Commodities (TPCRAC), 40 CFR Part 180 and the Food and Drug Administrations Tolerances for Pesticides in Food administered by EPA (TPF) are not relevant and appropriate to apply in the context of this IRA. These standards were developed for particular items (e.g., food and crops) which are not subject to watering with the effluent from this treatment system, which must pass through the STP and is subject to the limitations of the NPDES permit prior to release from RMA.

The Colorado Basic Standards for Groundwater (CBSG) were reviewed and are not considered applicable to the discharge from this IRA treatment system, consistent with current EPA guidance as contained in the NCP. These standards were developed for groundwater and are not appropriate to apply to the effluent discharged from this treatment system into the sanitary sewer for transport to the STP. However, the numerical standards contained in these recently revised regulations were considered relevant and appropriate to apply to this IRA treatment system in order to protect potentially impacted groundwater. The policy stated in Section 3.11.5.C.4 was followed concerning stated detection limits.

The Colorado Basic Standards and Methodologies for Surface Water 3.1.0 (5 CCR 1002-8) (CBSM) were reviewed and not considered applicable to this IRA treatment system, which does not discharge effluent into surface waters. The effluent from this IRA treatment system receives further treatment at the RMA Sewage Treatment Plant prior to discharge to First Creek. These standards, however, are considered relevant and appropriate to apply to this IRA treatment system. The Army has selected the standards at 3.1.11, Table C and the Agricultural standards from Tables II and III, for compounds anticipated to be in the effluent as relevant and appropriate due to First Creek's designation as Class 2 recreation, Class 2 warm water aquatic life and Agricultural waters. The policy contained in CBSM 3.1.14(9) was followed concerning stated detection limits.

Federal Water Quality Criteria (FWQC) were reviewed and considered not applicable to this IRA since they are guidelines and not enforceable limitations. This IRA will discharge into the sanitary sewer from transport to the RMA STP for further treatment.

The discharge from the STP is limited by the effluent limitations contained in the NPDES permit, which are developed to protect the uses of the waterways receiving the discharge. Consistent with the Proposed NCP, recent information concerning compounds for which FWQC exist was reviewed, including Reference Doses (RfD) and Unit Risk (UR) information, to determine whether more current data exists than that reflected in the FWQC. Consistent with the Proposed NCP, the more recent data was utilized and constituted "To Be Considered" (TBC) standards. Under these circumstances, FWQC were not considered relevant and appropriate to apply in the context of this IRA where more recent data existed from which a TBC could be determined.

In order to provide adequate protection of public health and the environment, the Army has determined that Maximum Contaminant Levels (MCLs) established under the Safe Drinking Water Act are relevant and appropriate to apply within the context of this IRA. The Army has also determined that the pretreatment standards of 40 CFR § 403.5 issued pursuant to the Clean Water Act are relevant and appropriate to apply in the context of this IRA. The Army believes that these limitations, in conjunction with the identified standards from the CSM and CSBG, will protect the functioning of the STP and result in an effluent which does not represent a potential risk to human health and the environment. This effluent will then be further treated at the RMA STP, in conjunction with other influent streams, and be released pursuant to the NPDES permit.

Several compounds, at present, only have MCLs proposed or have other health effects information with a high degree of creditability available which does not come within the definitions of applicable or relevant and appropriate requirements. These, while not ARARs, are considered in the design of the system. These compounds are listed separately as TBCs, consistent with the NCP. For some compounds, no ARAR or TBC standard was identified. These compounds include Bicycloheptadiene, p-chlorophenylmethyl sulfur compounds, Dithiane, Dimethyldisulfide, Fluoroacetic Acid, Isodrin, Malathion, Oxathiane, Thiodiglycol, Supona, and Vapona. In order to be protective, the Army will apply any Remedial Action Objectives later developed in the Final Offpost EA/FS report to the extent practicable to these compounds.

The chemical-specific ARARs determined relevant and appropriate to apply in the context of this IRA are:

<u>Compound</u>	<u>ARAR Level</u>	<u>Source</u>
Acrylonitrile	2,600 ug/l	CBSM
Aldrin	0.1 ug/l	CBSG
Arsenic	50 ug/l	40 CFR § 141.11(b)
Benzene	5 ug/l	40 CFR § 141.61(a)
Cadmium	10 ug/l	40 CFR § 141.11(b)
Carbon Tetrachloride	5 ug/l	40 CFR § 141.61(a)
Chlordane	0.1 ug/l	CBSM
Chloride	250,000 ug/l	CBSG
Chlorobenzene	300 ug/l	CBSG
Chloroform	100 ug/l	40 CFR § 141.12
Chromium	50 ug/l	40 CFR § 141.11(b)
Copper	200 ug/l	CBSM
DDT	0.1 ug/l	CBSM
DDE	0.1 ug/l	CBSM
1,4-Dichlorobenzene	75 ug/l	CBSG
1,2-Dichloroethane	5 ug/l	40 CFR § 141.61(a)
1,1-Dichloroethylene	7 ug/l	CBSG
Trans-1,2-Dichloroethylene	7 ug/l	40 CFR § 141.61(a)
1,2-Dichloropropane	6 ug/l	CBSG
Dieldrin	0.1 ug/l	CBSG
Endrin	0.1 ug/l	CBSM
Ethylbenzene	680 ug/l	CBSG
Fluoride	2,000 ug/l	CBSM
Hexachlorocyclopentadiene	49 ug/l	CBSG
Lead	50 ug/l	40 CFR § 141.11(b)
Mercury	2 ug/l	40 CFR § 141.11(b)
Parathion	0.3 ug/l	CBSM
Tetrachloroethylene	10 ug/l	CBSG
Toluene	2,420 ug/l	CBSG
1,1,1-Trichloroethane	200 ug/l	40 CFR § 141.61(a)
1,1,2-Trichloroethane	28 ug/l	CBSG
Trichloroethylene	5 ug/l	40 CFR § 141.61(a)
Vinyl Chloride	2 ug/l	40 CFR § 141.61(a)
Zinc	2,000 ug/l	CBSM

The following standards are TBCs and will be considered in the design of this treatment system and sought to be attained, if practicable:

<u>Compound</u>	<u>TBC Level</u>	<u>Source</u>
Aldrin	0.002 ug/l	EPA UR (10(-6))
Atrazine	3 ug/l	54 FR 22093
Cadmium	5 ug/l	54 FR 22093
Chlordane	2 ug/l	54 FR 22093
Chloroacetic Acid	70 ug/l	EPA RFD
Chlorobenzene	700 ug/l	EPA RFD

Chloroform	6 ug/l	EPA RfD
Copper	1,300 ug/l	53 FR 31516
DDT	0.1 ug/l	EPA UR (10(-6))
1,2-Dibromo-3-chloropropane	0.2 ug/l	54 FR 22093
1,1-Dichloroethane	0.4 ug/l	EPA UR (10(-6))
1,1-Dichloroethylene	0.06 ug/l	EPA UR (10(-6))
Dicyclopentadiene	1,050 ug/l	EPA RfD
Dieldrin	0.002 ug/l	EPA UR (10(-6))
DIMP	600 ug/l	EPA Health
		Advisory (Dec 88)
Ethylbenzene	700 ug/l	54 FR 22093
IMPA	16,800 ug/l	USAMRDL Tech.
		Rep. 8302 (Oct 84)
Lead	5 ug/l	53 FR 31516
Methylene Chloride	4.8 ug/l	EPA RfD
Methylisobutyl ketone	1,750 ug/l	EPA RfD
Parathion	210 ug/l	EPA RfD
Tetrachloroethylene	5 ug/l	54 FR 22093
1,1,2-Trichloroethane	0.6 ug/l	EPA UR (10(-6))
Toluene	2,000 ug/l	54 FR 22093
Xylenes (Total)	10,000 ug/l	54 FR 22093
Zinc	7,000 ug/l	EPA RfD

### Air Emissions

The standards contained at 40 CFR Part 50 were reviewed and determined to be neither applicable nor relevant and appropriate to this IRA. These standards apply to Air Quality Control Regions (AQCR), which are markedly dissimilar from the area that may be affected by the operation of an air stripper during treatment by this IRA system. The compounds to be treated by this IRA treatment system are markedly dissimilar to the criteria pollutants regulated by 40 CFR Part 50 and these ambient air standards are neither designed for nor normally applied to specific emissions sources such as an air stripping system, making these standards inappropriate to apply in the context of this IRA. While these standards do not apply to the specific emissions from the IRA treatment system, the system will be controlled and monitored so that emissions from it do not cause exceedances of ambient air standards in the AQCR.

The standards contained at 40 CFR Parts 60 and 61 were reviewed and determined not to be applicable to air stripper operations conducted as part of the treatment by this IRA system. These standards apply to specific sources of the listed pollutants. For example, Subpart E of 40 CFR Part 61 applies to sources which process mercury ore to recover mercury and other specific processes, Subpart J of this Part applies to sources which include equipment which contains or contacts a fluid that is at least 10 percent benzene by weight and the arsenic provisions of Subparts

N, O and P of this part apply to very specific plants, smelters or facilities. Since the air stripper operations contemplated by this IRA treatment system are extremely dissimilar from the processes described in 40 CFR Part 61 and the liquid concerned is also extremely dissimilar to the liquid described in Subpart J of 40 CFR Part 61, these standards were also not considered to be relevant and appropriate to apply to this IRA treatment system. However, as discussed in Section 3 concerning action-specific ARARs, the Army will apply best practicable control technology to air stripper emissions.

The provisions contained in 40 CFR Part 60, Subpart Kb will be considered relevant and appropriate to apply to any storage vessels with a capacity greater than or equal to 40 cubic meters that is used to store volatile organic liquids in the context of this IRA. Only limited provisions of this Subpart affect storage vessels with a design capacity of less than 75 cubic meters.

The policy contained in OSWER Directive 9355.0-28, dated June 15, 1989 is a TBC for the operation of any air stripper in the context of this IRA.

The provisions of 5 CCR 1001-10, Regulation 8, Section IV concerning mercury emissions, limiting such emissions to 2300 grams/five pounds per day, are considered relevant and appropriate to apply to this treatment system.

#### **8.2. LOCATION-SPECIFIC ARARS**

Location-specific requirements set restrictions on activities, depending on the characteristics of the site or the immediate environment, and function like action-specific requirements. Alternative remedial actions may be restricted or precluded, depending on the location or characteristics of the site and the requirements that apply to it.

Paragraph 44.2 of the Federal Facility Agreement provides that "wildlife habitat(s) shall be preserved and managed as necessary to protect endangered species of wildlife to the extent required by the Endangered Species Act (16 U.S.C. 1531 et seq.), migratory birds to the extent required by the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.), and bald eagles to the extent required by the Bald Eagle Protection Act, 16 U.S.C. 688 et seq."

While this provision is not an ARAR, the statutes cited therein are ARARs, applicable to this IRA and will be complied with. Based on where this treatment system will be located the Army believes that this IRA will have no adverse impact on any endangered species or migratory birds or on the protection of wildlife habitats. Coordination will be maintained with the U.S.



Fish and Wildlife Service to ensure that no such adverse impact arises from implementation of this IRA.

The provisions of 40 CFR 6.302(a) and (b) regarding construction that would have an adverse impact on wetlands or be within a flood plain are considered relevant and appropriate to apply in the context of this IRA. Based upon where this system will be located the Army believes that there will be no adverse impact on wetlands from the construction of this system. Coordination will be maintained with the U.S. Fish and Wildlife Service to ensure that any such adverse impacts are avoided or mitigated.

The regulations at 40 CFR 230 were reviewed and determined not to be applicable within the context of this IRA because on discharge of dredged or fill material into waters of the United States is contemplated. Because these regulations address only the disposal of such materials into waters of the United States, which is not contemplated, they are not considered to be relevant and appropriate to apply in the context of this IRA.

The regulations at 33 CFR 320-330 were reviewed and determined to be neither applicable nor relevant and appropriate because the IRA treatment system does not involve any of the activities, or similar to the activities, intended to be controlled by these regulations as defined in 33 CFR §320.1(b).

### **8.3 ACTION-SPECIFIC ARARS**

#### **Description**

Performance, design, or other action-specific requirements set controls or restrictions on activities related to the management of hazardous substances, pollutants, or contaminants. These action-specific requirements may specify particular performance levels, actions, or technologies as well as specific levels (or a methodology for setting specific levels) for discharged or residual chemicals.

#### **Construction of Treatment System**

##### **Air Emissions**

On the remote possibility that there may be air emissions during the course of the construction of this treatment system, the Army has reviewed all potential ambient or chemical-specific air emission requirements. As a result of this review, the Army found that there are, at present, no National or State ambient air quality standards currently applicable or relevant and appropriate

to any of the volatile or semivolatile chemicals in the ground water found in the area in which construction is contemplated.

In the context of this IRA, there is only a very remote chance of any release of volatiles or semivolatiles and, even if such a release did occur, it would only be intermittent and of very brief duration (because the activity that produced the release would be stopped and modified appropriately if a significant air emission was detected by the contractor's air monitoring specialist). The Army has significant experience with the construction of extraction and reinjection wells and has not experienced any problems from air emissions during construction of such facilities. This IRA does not contemplate construction of wells, therefore almost eliminating any chance of air emissions during construction. The construction of facilities, including any decontamination pads, is not expected to involve excavation at depths which could result in release of volatile organics, making any ambient air quality standards neither relevant nor appropriate to this construction activity. Monitoring will be conducted pursuant to the site-specific Health and Safety Plan to ensure that construction activities do not result in releases of volatile organics which could adversely impact ambient air quality.

The site-specific Health and Safety Plan will adequately address these concerns. This plan to be developed for use in this IRA will detail the site monitoring program and define any operational modifications to be implemented in the event monitoring detects specific levels of such emissions. This plan is developed after the actual construction site has been chosen and is based upon site-specific information. It will be available for review later in the IRA process.

The National Emissions Standards for Hazardous Air Pollutants (NESHAPS) were evaluated to determine whether they were applicable or relevant and appropriate to apply in the context of construction of this IRA. These standards were not considered applicable because they apply to stationary sources of these pollutants, not to construction activity. They were not considered relevant and appropriate because they were developed for manufacturing processes, which are significantly dissimilar to the short-term construction activity contemplated by this IRA.

The provisions of 40 CFR 50.6 will be considered relevant and appropriate. This standard is not applicable because it addresses Air Quality Control Regions, which are areas significantly larger than and different from the area of concern in this IRA. Pursuant to this regulation, there will be no particulate matter transported by air from the site that is in excess of 50 micrograms per cubic meter (annual geometric mean) and 150 micrograms per cubic meter

(maximum 24-hour concentration) will not be exceeded more than once per year.

#### Air Stripper Operations

Since an air stripper is used in conjunction with the treatment system, the Army will treat the provisions of Colorado Air Pollution Control Regulation No.3, Section IV (D)(3)(a), as relevant and appropriate and will use best practical control technology. This regulation is not applicable because the IRA treatment system will not be a major stationary source, as defined in that regulation. Also considered relevant and appropriate to operations are the provisions of 5 CCR 1001-14, Regulation No. 2, concerning odor emissions.

The air stripper will be operated so that it will not cause exceedances of the federal ambient air standards listed in 40 CFR Part 50 and State ambient air standards contained in 5 CCR 1001-14.

#### Worker Protection

The provision of 29 CFR 1910.120 are applicable to workers at the site because these provisions specifically address hazardous substance response operations under CERCLA. It should be noted that these activities are presently governed by the interim rule found at 29 CFR 1910.120 but that by the time IRA activity commences at the site, the final rule found at 54 FR 9294 (March 6, 1989) will be operative. (The final rule became effective on March 6, 1990.)

#### General Construction Activities

The following performance, design, or other action-specific State ARARs have been preliminarily identified by the Army as applicable to construction activities conducted pursuant to this IRA:

Colorado Air Pollution Control Commission Regulation No. 1, 5 CCR 1001-3, Part III(D)(2)(b), Construction Activities:

- a. Applicability - Attainment and Nonattainment Areas
- b. General Requirement

Any owner or operator engaged in clearing or leveling of land or owner or operator of land that has been cleared of greater than one (1) acre in nonattainment areas for which fugitive particulate emissions will be emitted shall be required to use all available and practical methods which are technologically

feasible and economically reasonable in order to minimize such emissions, in accordance with the requirements of Section III.D. of this regulation.

**c. Applicable Emission Limitation Guideline**

Both the 20% opacity and the no off-property transport emission limitation guidelines shall apply to construction activities; except that with respect to sources or activities associated with construction for which there are separate requirements set forth in this regulation, the emission limitation guidelines there specified as applicable to such sources and activities shall be evaluated for compliance with the requirements of Section III.D. of this regulation. (Cross Reference: Subsections e. and f. of Section III.D.2 of this regulation).

**d. Control Measures and Operating procedures**

Control measures or operational procedures to be employed may include but are not necessarily limited to planting vegetation cover, providing synthetic cover, watering, chemical stabilization, furrows, compacting, minimizing disturbed area in the winter, wind breaks, and other methods or techniques.

**Colorado Ambient Air Quality Standards, 5 CCR 1001-14, Air Quality Regulation A, Diesel-Powered Vehicle Emission Standards for Visible Pollutants:**

a. No person shall emit or cause to be emitted into the atmosphere from any diesel-powered vehicle any air contaminant, for a period greater than 10 consecutive seconds, which is of such a shade or density as to obscure an observer's vision to a degree in excess of 40% opacity, with the exception of Subpart B below.

b. No person shall emit or cause to be emitted into the atmosphere from any naturally aspirated diesel-powered vehicle of over 8,500 lbs gross vehicle weight rating operated above 7,000 feet (mean sea level), any air contaminant for a period greater than 10 consecutive seconds, which is of such a shade or density as to obscure an observer's vision to a degree in excess of 50% opacity.

c. Diesel-powered vehicles exceeding these requirements shall be exempt for a period of 10 minutes, if the emissions are a direct result of a cold engine start-up and provided the vehicle is in a stationary position.

d. This standard shall apply to motor vehicles intended, designed, and manufactured primarily for use in carrying passengers or cargo on roads, streets, and highways.

**Colorado Noise Abatement Statute, C.R.S. Section 25-12-103:**

a. Each activity to which this article is applicable shall be conducted in a manner so that any noise produced is not objectionable due to intermittence, beat frequency, or shrillness. Sound levels of noise radiating from a property line at a distance of twenty-five feet or more therefrom in excess of the db(A) established for the following time periods and zones shall constitute prima facie evidence that such noise is a public nuisance:

<u>Zone</u>	<u>7:00 a.m. to next 7:00 p.m.</u>	<u>7:00 p.m. to next 7:00 a.m.</u>
Residential	55 db(A)	50 db(A)
Commercial	60 db(A)	55 db(A)
Light Industrial	70 db(A)	65 db(A)
Industrial	80 db(A)	75 db(A)

b. In the hours between 7:00 a.m. and the next 7:00 p.m., the noise levels permitted in subsection (1) of this section may be increased by ten db(A) for a period of not to exceed fifteen minutes in any one-hour period.

c. Periodic, impulsive, or shrill noises shall be considered a public nuisance when such noises are at a sound level of five db(A) less than those listed in Subpart (a) of this section.

d. Construction projects shall be subject to the maximum permissible noise levels specified for industrial zones for the period within which construction is to be completed pursuant to any applicable construction permit issued by proper authority or, if no time limitation is imposed, for a reasonable period of time for completion of the project.

e. For the purpose of this article, measurements with sound level meters shall be made when the wind velocity at the time and place of such measurement is not more than five miles per hour.

f. In all sound level measurements, consideration shall be given to the effect of the ambient noise level created by the

encompassing noise of the environment from all sources at the time and place of such sound level measurements.

In substantive fulfillment of Colorado Air Pollution Control Commission Regulation No. 1, this IRA will employ the specified methods for minimizing emission from fuel burning equipment and construction activities. In substantive fulfillment of Colorado's Diesel-Powered Vehicle Emission Standards, no diesel motor vehicles associated with the construction shall be operated in a manner that will produce emissions in excess of those specified in these standards.

The noise levels pertinent for construction activity provided in C.R.S. Section 25-12-103 will be attained in accordance with this applicable Colorado statute.

#### Wetlands Implications

Through estimation of the general area where a system would be located, the Army does not believe that any wetlands could be adversely affected. However, until a final design is selected and a final siting decision made, it cannot be definitively determined that no impact on wetlands will occur. If the final site selection and/or design results in an impact on wetlands, the Army will review the regulatory provisions concerning wetlands impact and other appropriate guidance, and will proceed in a manner consistent with those provisions. Coordination will be maintained with the U.S. Fish and Wildlife Service concerning any potential impacts on wetlands.

#### Land Disposal Restrictions and Removal of Soil

There are no action-specific ARARs that pertain to the excavation of soil during the construction of this treatment system.

EPA is currently developing guidance concerning the Land Disposal Restrictions (LDR). While guidance is limited, the Army has not determined that any waste subject to LDR will be present in the influent treated by this IRA. More guidance is scheduled to be completed prior to the implementation of this IRA and the Army will review these as they are released. If it is determined that a waste subject to LDR is present, the Army will act in a manner consistent with EPA guidance then in effect for the management of such as the context of CERCLA cleanup actions.

Although removal of soil from the area where treatment system will be located is a TBC, not an ARAR, it will be performed in accordance with the procedures set forth in the Task No. 32 Technical Plan, Sampling Waste Handling (November 1987), and EPA's

July 12, 1988, memorandum regarding "EPA Region VIII Procedure for Handling of Materials from Drilling, Trench Excavation and Decontamination during CERCLA RI/FS Operations at the Rocky Mountain Arsenal." In general, any soils generated by excavation during the course of this IRA, either at surface or subsurface, will be returned to the location from which they originated (i.e., last out, first in). Any materials remaining after completion of backfilling that are suspected of being contaminated (based on field screening techniques) will be properly stored, sampled, analyzed, and ultimately disposed as CERCLA hazardous wastes, as appropriate.

Sludges which remain from the treatment system will be similarly managed. Such material will be screened and sampled to determine if it constitutes hazardous waste and also the specific material will be evaluated to determine whether any LDRs then in effect apply to its management. Any such material will be either managed on-site pending later disposal or sent for off-site disposal, as determined later in the IRA process when more specific information is developed. It is not possible until later in the IRA process to specifically identify requirements which will apply to management of such material, however these are generally discussed below.

For material determined to be hazardous waste, substantive RCRA provisions are applicable to their management. These substantive provisions include but are not limited to: 40 CFR Part 262 (Subpart C, Pre-Transport Requirements), 40 CFR part 263 (Transporter Standards), and 40 CFR Part 264 (Subpart I, Container Storage). The specific substantive standards applied will be determined by the factual circumstances of the accumulation, storage, or disposal techniques actually applied to any such material.

### Tanks

The Army has not identified in the influent for this IRA a listed waste, as identified by Subpart D for 40 CFR Part 261. It is not believed that the influent for this treatment system will exhibit any of the characteristics of hazardous waste identified in Subpart C of 40 CFR Part 261 due to the low levels of contaminants anticipated to be contained in the influent. Therefore, Subpart J of 40 CFR Part 265 is not considered applicable to this IRA. However, Subpart J of 40 CFR Part 265 will be considered relevant and appropriate to apply in the context of this IRA to tanks which are used to store liquid prior to its treatment by the IRA treatment system.